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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Eva Binggeli

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NORRIS, MCLAUGHLIN & MARCUS
875 THIRD AVE
18TH FLOOR
NEW YORK, NY 10022

EXAMINER

PRATT, HELEN F

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/505,251	Applicant(s) BINGGELI ET AL.	
	Examiner Helen F. Pratt	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1--8, 12, 13, 15, 16, 17, 20, 21, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Todd (6,013,304 in view of Schieberle (XP-002249876) or Berchtold et al. (WO 03/041515).

Todd discloses that it is known to heat Cruciferae (Brassica) solids to produce flavor, and aroma, which can be used to flavor foods and beverages, which inherently would have produced flavor modifying properties as it can be heated from 130 to 450 F (col. 4, lines 15-40, lines 53-60, col. 7, lines 40-48, col. 28, lines 36-40). The reference differs from claims 1 and 2 in the use of seeds and in the lower limit of the temperature range. However, generally the seeds are the part of the mustard plant which is processed into a flavorant and condiment. Schieberle (XP-002249876) disclose a process of making treated sesame seeds by roasting sesame seeds, which contain 2-furfurylthiol. The reference discloses that roasting of the odorless sesame seeds generates an intense flavor (page 145, paragraphs 1-3). Temperatures of 180 C for 30 minutes can be used as above. Therefore, it would have been obvious to use the seeds of Brassica as disclosed by Schieberle, and the higher temperature as shown by Schieberle in the process and

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product of Todd for the function of producing flavor modifying ingredients such as fft since Schieberle discloses that fft is produced by temperatures of 180 C.

Schieberle (XP-002249876) disclose a process crushing the seeds on page 147, para. 2. as in claim 3.

An extract and distillate is disclosed as in claims 4 and 5 using a hydrocarbon (page, 148).

The product is disclosed as in claims 4 and 5 and 6 and an extract thereof as in claim 7 (page 148). Therefore, it would have been obvious to process as shown by Schieberle in the process and product of Todd.

A consumable or flavor preparation is seen to have been made as the composition is disclosed as above as in claims 6–8. (Todd col. 7, lines 44-60). The fact that the procedures of the reference are different than that of applicant is not a sufficient reason for allowing the product-by-process claims since the patentability of such claims is based upon the product formed and not the method by which it was produced. See *In re Thorpe* 227 USPQ 964. The burden is upon applicant to submit objective evidence to support their position as to the product-by-process claims. See *Ex parte Jungfer* 18 USPQ 2D 1796. Therefore, it would have been obvious to make such products as shown by the combined references of Schieberle and Todd.

2-Furfurythiol (FFT) is disclosed as being made by the process of claim 1 (Schieberle, page 145, 1st col.) as in claims 12 and 15. Even though sesame seeds are not brassica seeds, the reference discloses how FFT is extracted and if heating seeds containing FFT develops the FFT,

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it would have been obvious to extract it from other seeds such as Brassica as shown by Todd, who would inherently develop FFT since the claimed range of temperature is shown by Todd in view of Schieberle. An increase in the concentration of FFT of 100% is seen to have resulted as in claim 13, since before roasting the sesame seeds were odorless, but afterwards an intense flavor was developed (page 145, 1st para.). Therefore, it would have been obvious to make 2FFT using the process of Todd in view of Schieberle.

The degree of concentration as in claims 16, 17, is seen to have been shown since the process has been shown as above. The product is considered to be a roasted brown material (page 147, 2nd. Para, page 148, 1 and 2nd col.'s) .

Claims 20 and 21 further requires particular Brassica seeds. However, Todd discloses the use of Brassica alba, which is white mustard.

Claim 22 further requires whole seed of Brassica. However, it would have been within the skill of the ordinary worker to use whole seed, or whatever part of the seed which produced the desired flavorants. Sesame seeds have been disclosed above. Therefore, it would have been obvious to use seeds in the product and process of Todd.

Berchtold et al. disclose roasting seeds as in claim 1 from various families including cruciferum and brassica by continuously heating seeds to a predetermined temperature (abstract). Times and temperatures as in claim 2 of up to 120 C for 10 minutes are disclosed on page 3, lines 14-18. The product is seen to have had a flavor modifying property since it was heated to within the claimed time as in claims 1 and 2 as shown in the specification. It is well known, that foods can be heated for various lengths of time, for longer times as shown by Berchtold et al. i. e. 10 minutes, or shorter times at higher temperatures as shown by the instant application. Nothing

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has been shown that heating sesame seeds for 10 minutes at the claimed temperatures would not have developed ff-2. As Todd teaches treating cruciferum (brassica) at higher temperatures, it would have been obvious to vary the temperature as shown by Berchtold et al. in the process of Todd.

Reducing the seeds or fragmenting them is disclosed on page 5, lines 15-20 as in claim 3.

Products are disclosed as in claims 6 and 7, as in claim 1 which is a whole or fragmented heat- treat seed as in claims 1-7 of the reference (page 10, lines 1-30).

The product is considered consumable as in claim 8 since that is the purpose of treating the seeds as in claim 8 (page 12, lines 15-20).

Furfurylthiol (2-FFT) is seen to be increased to 100 % as in claims 12, 13, 15 since the process of heating to the claimed temperature has been shown as in claims 1 and 2.

Claim 1 and the other pertinent claims have been amended to require a higher lower temperature of 160 C. However, nothing critical is seen in the specification as to using temperatures in the range of 120-250 C.(col. 2, lines 1-4). Even though sesame seeds are not Brassica seeds, they contain the same 2-furfurylthiol which is developed on heating, and now Brassica plants containing seeds have been disclosed which can be treated at high temperatures to extract flavors. Since the chemical compound of 2-furfurylthio (2 ff) would be the same no matter what type of seed was used, then heating it to temperatures within the claimed amount would develop the 2-fft. Therefore, it would have been obvious to treat other seeds containing 2ff with heat at even higher temperatures in order to develop 2-fft as to further treat as shown by the independent claims.

Claims 1-7, 12, 15, 16, 20, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Todd in view of Vasundhara et al. (XP 009014888).

Todd discloses that it is known to heat Cruciferae (Brassica) solids to produce flavor, and aroma, which can be used to flavor foods and beverages, which inherently would have produced flavor modifying properties as it can be heated from 130 to 450 F (col. 4, lines 15-40, lines 53-60, col. 7, lines 40-48, col. 28, lines 36-40). The reference differs from claims 1 and 2 in the use of seeds and in the lower limit of the temperature range. However, generally the seeds are the part of the mustard plant which is processed into a flavorant and condiment. Vasundhara discloses that the mustard seed (*Brassica Juncea* Linn) can be roasted which brings about a flavor change as in claim 1, to a temperature of 120 C for about 2 hours (claim 2), and ground as in claim 3 (abstract, page 685, 3rd, page 686, para. 1). Claim 1 and the other pertinent claims have been amended to require a higher temperature of 160 C. However, nothing critical is seen in the specification as to using temperatures in the range of 120-250 C.(col. 2, lines 1-4). Also, Todd discloses treating at the higher temperatures. Brassica seeds, contain the same 2-furfurylthiol which is developed on heating. Since the chemical compound of 2-furfurylthio (2ff) would be the same no matter what type of seed was used, then heating it to temperatures within the claimed amount would develop the 2ff. Therefore, it would have been obvious to treat Brassica seeds containing 2ff as shown by Vasundhara in the process and product of Todd and to heat at even higher temperatures in order to develop 2-fft. as shown by Todd.

An extract is made as in claim 4 from methylene chloride and steam distilled as in claim 5 (page 686, lines 4 and 5).

A roasted powder is made as in claim 6 which is extracted as in claim 7 (page 686, 1st para.).

FFT is formed as in claim 12 (page 691 1st para.). The product containing FFT is formed as in claim 15 and claim 16.

Brassium juncea is disclosed as in claims 20 and 21.

Therefore, it would have been obvious to treat as disclosed by Vasundharra, as in claims 5, 6, 7, 12, 15, 16, 20, and 21 in the process and product of Todd.

Claims 9-11, 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Todd in view of Schieberle (XP-002249876) or Berchtold et al. (WO 03/041515) or Vasundhara et al. as applied to claims 1--8, 12, 13, 15, 16, 17, 20, 21, 22 and further in view of Lynn (3,697,290) .

Lynn discloses a non-elastic protein containing product where the protein is from seeds such as sesame seed meal or cotton seed or soybean meal. The composition containing the seeds is heated to from 300 to 350 F (148 C to 176) Sesame seeds are known to contain 2-fft as in Schieberle . Seeds as in claims 9 and 10 are used in large amounts and combining the seeds with a flavor imparting amount as in claim 11 is disclosed as the seeds are combined with other food ingredients (See examples). As it is known that the treated seeds are edible, it would have been obvious to use them in particular amounts for their known functions. FFT is seen to have been found in the food products of Lynn, since the composition is cooked twice to within the claimed heating range, which develops the FFT (col. 6, lines 30-70). The particular amount of FFT as in claims 16-20 is seen to have been within the skill of the ordinary worker, since it is known that these seeds generate FFT, and in cooking, one uses ingredients according to how

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they will make a product taste. Therefore, it would have been obvious to use known ingredients which contain FFT for their known function of imparting flavoring and nutrition.

Claims 8-10 have been amended to require that the flavor has been produced by the process of claim 1. The fact that the procedures of the reference are different than that of applicant is not a sufficient reason for allowing the product-by-process claims since the patentability of such claims is based upon the product formed and not the method by which it was produced. See *In re Thorpe* 227 USPQ 964. The burden is upon applicant to submit objective evidence to support their position as to the product-by-process claims. See *Ex parte Jungfer* 18 USPQ 2D 1796. Therefore, no weight is given to the process of claim 1 in claim 9.

ARGUMENTS

Applicant's arguments filed 2-10-09 have been fully considered but they are not persuasive.

Applicants argue that the Examiner appears to assert that 2-FFt is a chemical present which develops by heating. But that none of the references discloses that heating seeds containing 2-FFT will develop or form 2-FFT, or that seeds high in 2-FFT have a flavor enhancing effect. However, applicants' claim 1 is to heating brassica seeds for a time and temperature to develop flavor modifying properties. No mention of 2-FFT is seen in claim 1. Roasting is extremely well known to develop flavor in most foods, such as nuts, seeds, meats, bakery products and on.

As to using the method of roasting seeds to produce 2-FFT as in Schieberle, if one can roast one kind of seed, then it is obvious to roast seeds in general. For instance, if one knows that V-C is found in oranges, it would have been obvious to look in other fruits for the same

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vitamin. If one knows that 2-FFT is produced by roasting, then one would roast other seeds and nuts and foods to see if that compound was produced. A claim to 2-FF does don't appear until claim 15—18 inclusive.

Applicants argue that heating at 120 for 2 hours as in Vasundhara would probably not produce 2FF. This is not understood, if applicants specification uses such a temperature, then the 2FF would have to be produced as the process is known. (See page 2 of applicants' specification which uses various ranges of temperatures and times). Just because the chemical was not recognized, but is inherently found in the process of roasting does not mean it was not produced.

Applicants argue that the range of 120 to 250 C is not the now claimed range. However, if applicants disclose that heating from 120 to 250 C will make FFT, then nothing critical is seen in picking out the temperature with the best results, as the whole range will work in the process.

Vasundhara discloses one of applicants ranges, which is disclosed in applicants specification and cannot be disregarded. As applicants' Table 5 is predictable. Short heating times, less 2FFT, longer heating times, more 2FFT. Even if Vasundharra does not detect 2-FFT, as the process has been shown, there would have been some 2-FFT.

Applicants argue that the higher temperature of 160 C is significantly higher and makes more 2-FFT. However, most of the claims do not mention 2-FFT. As to applicants table 5, the results are predictable.

Applicants argue that the process of roasting sesame seeds as in Schieberle would not apply to other seeds. Surely, it would have been obvious if 2FFt is found in roasted sesame seeds when roasted at 180 C for 30 minutes, then one could roast other seeds at them temperature

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and would detect the 2FFT if present especially as Todd discloses the claimed process using Brassica seeds.

One would look to other seeds which have flavoring compounds for the FFT and need only to roast to high temperatures to see if the 2FFT were present.

Applicants argue as to Lynn, that it uses sesame seeds. However, claim 9 requires extracts from Brassica seeds and sesame seeds would have provided at least the FFT since it is found in sesame seeds.

Applicants argue that Brassica seeds and sesame seeds botanically are extremely remote. However, they are linked by the fact that they both contain 2-FFT. As it is known that 2FFT is found in roasted seeds, it would have been obvious to look at other seeds to see if they contain the claimed 2FFt when roasted. In addition as above, most of the claims do not specifically require 2-FFT in any amounts.

Applicants argue that it would have been impossible to know if 2-FFT will be formed before trying it out and whether the resulting treated seeds will have the flavor modifying properties as well. However, if it is known that a product contains the 2-fft, then it would have been obvious to roast other seeds containing the 2-FFt since the reference to Schieberle discloses this is how the 2-FFT is developed.

Applicants argue that Bertchold fails to teach treating within the newly claimed range. However, Todd discloses treating higher temperatures and the specification clearly discloses treating at 120 C. Certainly, it is known to treat for longer times at lower temperatures and less time at higher temperatures and Bertchold treats for 10 minutes at the lower temperature.

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Applicants argue as to Vasundhara reference that Vasundhara does not teach 2-fft. However, the reference does disclose as in claim 1 roasting brassica seeds to within the claimed temperatures. Roasting develops sulfur containing compounds such as furfurylthiol. Furfural is disclosed on (page 691, 1st paragraph). If furfural can be detected nothing is seen that 2-furfurylthiol would not have been in the product as a volatile. Vasundhara discloses that roasting brown mustard produces six sulfur compounds and 2-fft is known to be one.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen F. Pratt whose telephone number is 571-272-1404. The examiner can normally be reached on Monday to Friday from 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Keith Hendricks, can be reached on 571-272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Helen F. Pratt/

Primary Examiner, Art Unit 1794 3-3-09